
Autodesk® PowerInspect® 2018

What's New

PowerInspect Ultimate



Contents

New features 1

User interface 2

Ribbon interface.....	3
Where is my command?.....	5
Background colour.....	12
Expanding tooltips	13
Dockable dialogs	14
CNC Replay buttons	15

Verification and collision-checking 16

Machine-part verification.....	17
Collision Avoidance Parameters	19
Verifying probe path items	23
Invalid tool check during full-screen measurement	24

Alignments 25

Setting alignment options.....	26
New Best Fit fitting type	27
Initial transformation for alignments	28
Geometric PLP alignment errors.....	29
RPS alignment constraints error message.....	29

Tolerances 30

Viewing the tolerance scale	31
Viewing tolerances in CAD View labels	32

Geometric item points 33

Single Probed Point fitting options	34
Reversing the order of points.....	34

Digitised curves 36

Polylines	37
-----------------	----

Point-cloud features 39

Point-cloud points used for fitting	40
Paste as Probed Ellipse.....	41
Index	43
Autodesk Legal Notice	45

New features

PowerInspect 2018 contains new features and enhancements in the following areas:

- **User interface** (see page 2)
- **Verification and collision-checking** (see page 16)
- **Alignments** (see page 25)
- **Tolerances** (see page 30)
- **Geometric item points** (see page 33)
- **Digitized curves** (see page 36)
- **Point-cloud features** (see page 39)

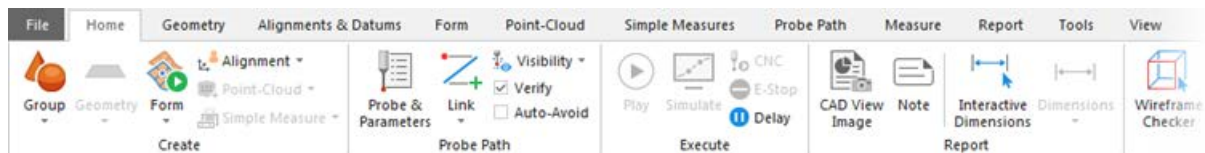
User interface

PowerInspect 2018 has the following improvements to the user interface:

- Ribbon interface (see page 3)
- Background colour (see page 12)
- Expanding tooltips (see page 13)
- Dockable dialogs (see page 14)
- CNC Replay buttons (see page 15)

Ribbon interface

The toolbars and menu options have been replaced with a ribbon to give PowerInspect a clear visual layout and provide consistency with other Autodesk products. The ribbon comprises several tabs, each of which represents a subset of program functionality. The tabs contain panels of related commands.



To minimize the ribbon, click the Minimize  button at the top-right of the screen. The tab names remain displayed when the ribbon is minimized. Click a tab name to display the ribbon. To maximize the ribbon, click the Maximize  button at the top-right of the screen.

Tabs

Select a tab to activate it and display the buttons on that tab:

- File — Use this tab to display the Backstage view.
- Home — Use this tab to access the most commonly used buttons from other tabs on the ribbon.
- Geometry — Use this tab to measure geometric items.
- Alignments & Datums — Use this tab to add alignment and datum items to the Sequence Tree.
- Form — Use this tab to measure surfaces, edges, and sections.
- Point Cloud — Use this tab to work with point-cloud items.
- Simple Measures — Use this tab to quickly measure distances between two features, and align the CAD to the part.
- Probe Path — Use this tab to manage probe paths.
- Measure — Use this tab to manage measures.
- Report — Use this tab to manage reports.
- Tools — Use this tab to access tools.
- View — Use this tab to control the display of information in the Graphics window.

Quick Access Toolbar

A Quick Access Toolbar is displayed at the top-left of the screen, above the ribbon. Use it to quickly perform standard functions such as Open and Save.



To show or hide options on the Quick Access Toolbar, click the down arrow button and select the options that you want to show. Deselect options that you want to hide.

View toolbar

A View toolbar is displayed vertically, to the right of the Graphics window. Use it to quickly access the most commonly used View buttons.



The toolbar is docked by default, to float it, click the down arrow button and select **Floating**. To re-dock the toolbar, double-click the grey area at the top of it.

Help menu

The Help menu is still available, to access it, click the **Help** icon at the top-right of the screen.

Where is my command?

Use this list to locate commands in the new ribbon interface.

Old menu location	New ribbon location
File > New Document	File tab > New > New Document
File > New Document Wizard	File tab > New > New Document Wizard
File > Open	File tab > Open
File > Close	File tab > Close
File > Save	File tab > Save
File > Save As	File tab > Save As
File > Export > Export As CAD	File tab > Export > Export as CAD
File > Export > Active Alignment	File tab > Export > Active Alignment
File > Export > Report	File tab > Export > Report
File > Page Setup	File tab > Print > Page Setup
File > Print	File tab > Print > Print
File > Print Preview	File tab > Print > Print Preview
File > Printer Setup	File tab > Print > Printer Setup
File > Recent Files	File tab > Recent
File > Exit	File tab > Exit
Edit > Cut	Home tab > Edit panel > Cut
Edit > Copy	Home tab > Edit panel > Copy
Edit > Copy as Points	Home tab > Edit panel > Copy as Points
Edit > Paste as Point Cloud	Home tab > Edit panel > Paste > Paste as Point-Cloud
Edit > Paste	Home tab > Edit panel > Paste > Paste
Edit > Delete	Home tab > Edit panel > Delete
Edit > Delete All	Dynamic Points tab > Edit panel > Delete > Delete All
Edit > Language	File tab > Options > Language
View > Resize to Fit	View tab > Navigation panel > Resize

	to Fit
View > From > Top (Z)	View tab > Views panel > From > Top (Z)
View > From > Front (-Y)	View tab > Views panel > From > Front (-Y)
View > From > Right (X)	View tab > Views panel > From > Right (X)
View > From > Bottom (-Z)	View tab > Views panel > From > Bottom (-Z)
View > From > Back (Y)	View tab > Views panel > From > Back (Y)
View > From > Left (-X)	View tab > Views panel > From > Left (-X)
View > ISO > Isometric 1	View tab > Views panel > ISO > ISO 1
View > ISO > Isometric 2	View tab > Views panel > ISO > ISO 2
View > ISO > Isometric 3	View tab > Views panel > ISO > ISO 3
View > ISO > Isometric 4	View tab > Views panel > ISO > ISO 4
View > ISO > Axonometric	View tab > Views panel > ISO > Axonometric
View > Custom View > Custom View #1	View tab > Views panel > User > User View 1
View > Custom View > Custom View #2	View tab > Views panel > User > User View 2
View > Custom View > Custom View #3	View tab > Views panel > User > User View 3
View > Custom View > Custom View #4	View tab > Views panel > User > User View 4
View > Custom View > Save Custom View #1	View tab > Views panel > User > Save User View 1
View > Custom View > Save Custom View #2	View tab > Views panel > User > Save User View 2
View > Custom View > Save Custom View #3	View tab > Views panel > User > Save User View 3
View > Custom View > Save	View tab > Views panel > User >

Custom View #4	Save User View 4
View > Rotation Anchor > View	View tab > View Options panel > Rotation Anchor > View
View > Rotation Anchor > Visible View	View tab > View Options panel > Rotation Anchor > Visible View
View > Rotation Anchor > Origin	View tab > View Options panel > Rotation Anchor > Origin
View > Rotation Anchor > Selected Point	View tab > View Options panel > Rotation Anchor > Selected Point
View > Machine > Show/Hide Machine	View tab > View Options panel > Machine > Show/Hide Machine
View > Machine > Show/Hide Probe	View tab > View Options panel > Machine > Show/Hide Probe
View > Machine > Show/Hide Probe Tool	View tab > View Options panel > Machine > Show/Hide Probe Tool
View > Probe Paths > Show Selected	View tab > View Options panel > Probe Paths > Show Selected Probe Path
View > Probe Paths > Show Visible	View tab > View Options panel > Probe Paths > Show Visible Probe Paths
View > Probe Paths > Show All	View tab > View Options panel > Probe Paths > Show All Probe Paths
View > Probe Paths > Hide	<i>Deselect all of the Show options.</i>
View > Show Grid	View tab > View Options panel > Grid Mode
View > Grid Mode > Part Coordinates	View tab > View Options panel > Grid Mode > Part Coordinates
View > Grid Mode > Datum Coordinates	View tab > View Options panel > Grid Mode > Datum Coordinates
View > Grid Mode > Machine Coordinates	View tab > View Options panel > Grid Mode > Machine Coordinates
View > Grid Mode > Common Machine Coordinates	View tab > View Options panel > Grid Mode > Common Machine Coordinates
View > Grid Mode > Probe Tool Coordinates	View tab > View Options panel > Grid Mode > Probe Tool Coordinates
View > Grid Mode > World Coordinates	View tab > View Options panel > Grid Mode > World Coordinates

View > Grid Mode > Local Quill Coordinates	View tab > View Options panel > Grid Mode > Local Quill Coordinates
View > Grid Mode > Local Probe Coordinates	View tab > View Options panel > Grid Mode > Local Probe Coordinates
View > Grid Mode > Local Probe Tool Coordinates	View tab > View Options panel > Grid Mode > Local Probe Tool Coordinates
View > Grid Mode > Local Probe Orientation PCS	View tab > View Options panel > Grid Mode > Local Probe Orientation PCS
View > Grid Mode > Local Probe Orientation WCS	View tab > View Options panel > Grid Mode > Local Probe Orientation WCS
View > Level > Selection	View tab > Appearance panel > Visible Levels
View > Level > Manager	<i>In Surface Selector mode, right-click the CAD View and select Group Surfaces.</i>
Measures > Play Item	Measure tab > Manual panel > Play Item
Measures > Play with Resume	Measure tab > Manual panel > Resume Measure
Measures > Play All	Measure tab > Manual panel > Play All
Measures > Reset All	Measure tab > Edit panel > Reset > Reset All
Measures > Reset Item	Measure tab > Edit panel > Reset > Reset
Measures > Delay Inspection	Measure tab > Manual panel > Delay Measure
Measures > Generate Probe Paths	Probe Path tab > Tools panel > Generate Probe Paths
Measures > New Measure	Measure tab > Current panel > New
Measures > Edit Measure	Measure tab > Edit panel > Edit
Measures > Delete Measures	Measure tab > Edit panel > Delete
Measures > Parameters	Measure tab > Current panel > Parameters
Measures > CAD Levels for Inspection	Measure tab > Options panel > Active Levels
Measures > Import Measured Data	Measure tab > Edit panel > Import
Measures > Transform Nominals	Tools tab > Transform panel >

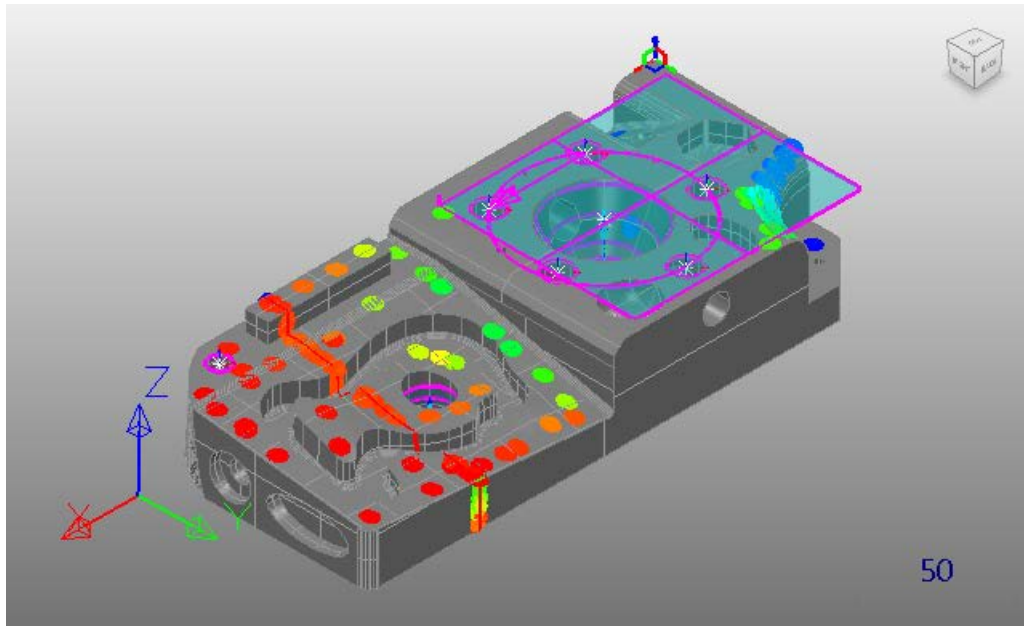
	Transform Nominals
Tools > Machine Connection > Connection	Tools tab > Machine panel > Connect
Tools > Machine Connection > Tracking	Tools tab > Machine panel > Track
Tools > Machine Connection > PowerInspect DRO	Tools tab > Machine panel > DRO
Tools > Machine Connection > Home	Tools tab > Machine panel > Home
Tools > Machine Connection > Configure	Tools tab > Machine panel > Configure
Tools > Machine Connection > Edit Probe Database	Tools tab > Machine panel > Probes
Tools > Machine Connection > Synchronise Probe Databases	<i>When the document is connected using the I++ Server protocol, click Synchronise Probe Databases in the Machine tab toolbar.</i>
Tools > Document Connection	Home tab > Document panel > Attach
Tools > Simulator > Change Machine Model	<i>Click Change Model in the Machine section of the Machine tab.</i>
Tools > Simulator > Import Configuration	<i>Click the Import button at the bottom of the Machine tab.</i>
Tools > Simulator > Export Configuration	<i>Click the Export button at the bottom of the Machine tab.</i>
Tools > Simulator > Auto Position	Tools tab > Simulator panel > Auto Position
Tools > Dual Column > Collision Prediction Configuration	Tools tab > Simulator panel > Dual Column > Configure Collision-Prediction
Tools > Dual Column > Simulator Configuration	Tools tab > Simulator panel > Dual Column > Configure Simulator
Tools > Dual Column > Machine Position Calibration	Tools tab > Simulator panel > Dual Column > Calibrate Machine Position Calibration
Tools > Probe Change Wizard	Probe Path tab > Tools panel > Probe-Change Wizard
Tools > Mirror Wizard	Tools tab > Transform panel > Mirror Wizard
Tools > Dynamic Points	Home tab > Mouse Context panel >

	Dynamic Points Editor
Tools > Import Points > Create Surface Inspection Group	Form tab > Points panel > Import > Create CNC Surface Group
Tools > Import Points > Create Edge Inspection Group	Form tab > Points panel > Import > Create CNC Edge Group
Tools > Import Points > Create Probed Single Points	Geometry tab > Points panel > Import > Probed Single Points
Tools > Import Points > Create Point Cloud Single Points	Geometry tab > Points panel > Import > Point-Cloud Single Points
Tools > Point Cloud > Project Selected Points	Point-Cloud tab > Project panel > Selected Points
Tools > Point Cloud > Project Point Cloud	Point-Cloud tab > Project panel > Point-Cloud
Tools > Point Cloud > Unproject Selected Points	Point-Cloud tab > Project panel > Unproject
Tools > Point Cloud > Sort Points	<i>Click column titles in Graphics window Point Cloud tab.</i>
Tools > Point Cloud > Export Point Cloud	Point-Cloud tab > Export panel > Point Cloud
Tools > Point Cloud > Export Points	Point-Cloud tab > Export panel > Points
Tools > Point Cloud > Evaluate Item From File	Point-Cloud tab > Items panel > From File
Tools > Point Cloud > Filter Point Cloud	Point-Cloud tab > Edit panel > Filter
Tools > Point Cloud > Triangulate Point Cloud	Point-Cloud tab > Triangulate panel > Create
Tools > Point Cloud > Register Point Cloud	Point-Cloud tab > Edit panel > Register
Tools > Probe Path Verification	Home tab > Probe Path panel > Verify
Tools > Levels for Probe Path Verification	Probe Path tab > Options panel > Verification Levels
Tools > Automatic Collision Avoidance Mode	Home tab > Probe Path panel > Auto-Avoid
Tools > Add-In Manager	File tab > Options > Add-In Manager
Tools > Macro Manager	Tools tab > Macro panel > Manager
Tools > Autodesk A360	Home tab > Autodesk panel > A360

Tools > Options	File tab > Options > Application Options
Window > New Window	View tab > Window panel > New
Window > Cascade	View tab > Window panel > Arrange & Switch > Cascade
Window > Tile Horizontally	View tab > Window panel > Arrange & Switch > Tile Horizontally
Window > Tile Vertically	View tab > Window panel > Arrange & Switch > Tile Vertically
Window > Rearrange Icons	View tab > Window panel > Arrange & Switch > Arrange
Window > List of Open Windows	View tab > Window panel > Arrange & Switch > Windows

Background colour

PowerInspect 2018 has a new default background colour, which gives consistency across related Autodesk products.



To view and edit default colours:

- 1 Open a document in PowerInspect.
- 2 Click File tab > Options > Application Options.
- 3 In the **Options** dialog tree, use the sub-pages under Display Options > Colours.

Expanding tooltips

The ribbon interface has expanding tooltips. Hover your mouse over a button to display help as a tooltip.

Geometric Group

Inserts a Geometric Group into the Sequence Tree and opens it.

[Press F1 for more help](#)

Where more tooltip help is available, the tooltip expands after a few seconds to show more information.

Geometric Group

Inserts a Geometric Group into the Sequence Tree and opens it.

Use a Geometric Group to contain and organize geometric items in the Sequence Tree.

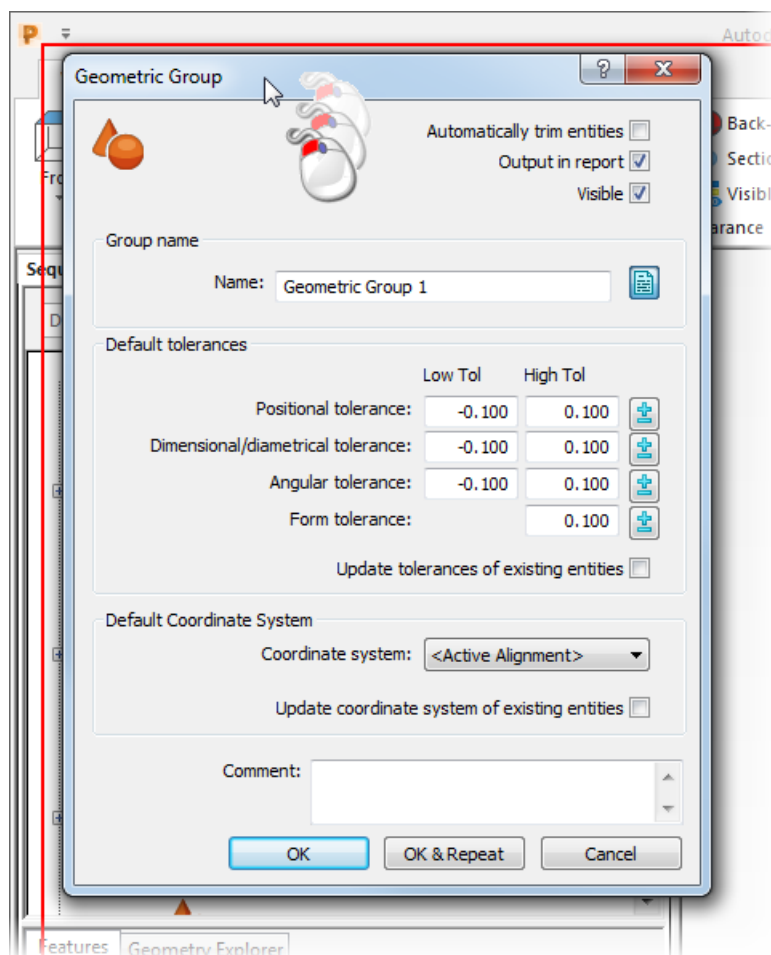
[Press F1 for more help](#)

Press **F1** to open the reference help at the correct page for the command.

Dockable dialogs

In PowerInspect 2018, you can dock the Modify Item dialogs to an edge of the PowerInspect window or your screen.

Drag the dialog to the edge or corner where you want to dock it. A red line is displayed when the dialog is in a location that you can drop it.



When you close the dialog, the same position is used for each subsequent use of the Modify Item dialogs.

CNC Replay buttons

In PowerInspect 2018, the simulation and run buttons from the **Features** tab are also available on the ribbon, on the Home tab > Execute panel.

Simulate — Click this button to simulate the probe path of the item selected in the **Sequence Tree**.

CNC — Click this button to run the probe path on the machine and save the results.

E-Stop — Click this button to immediately stop the simulation or measurement of the probe path.

Verification and collision-checking

PowerInspect 2018 has the following improvements to verification and collision-checking:

- Machine-part verification (see page 17)
- Collision Avoidance Parameters item (see page 19)
- Verifying probe-path items (see page 23)
- Invalid tool check during full-screen measurement (see page 24)

Machine-part verification

In PowerInspect 2018, you can check for collisions between all movable parts of the machine and part during interactive simulation.

To enable machine-part verification:

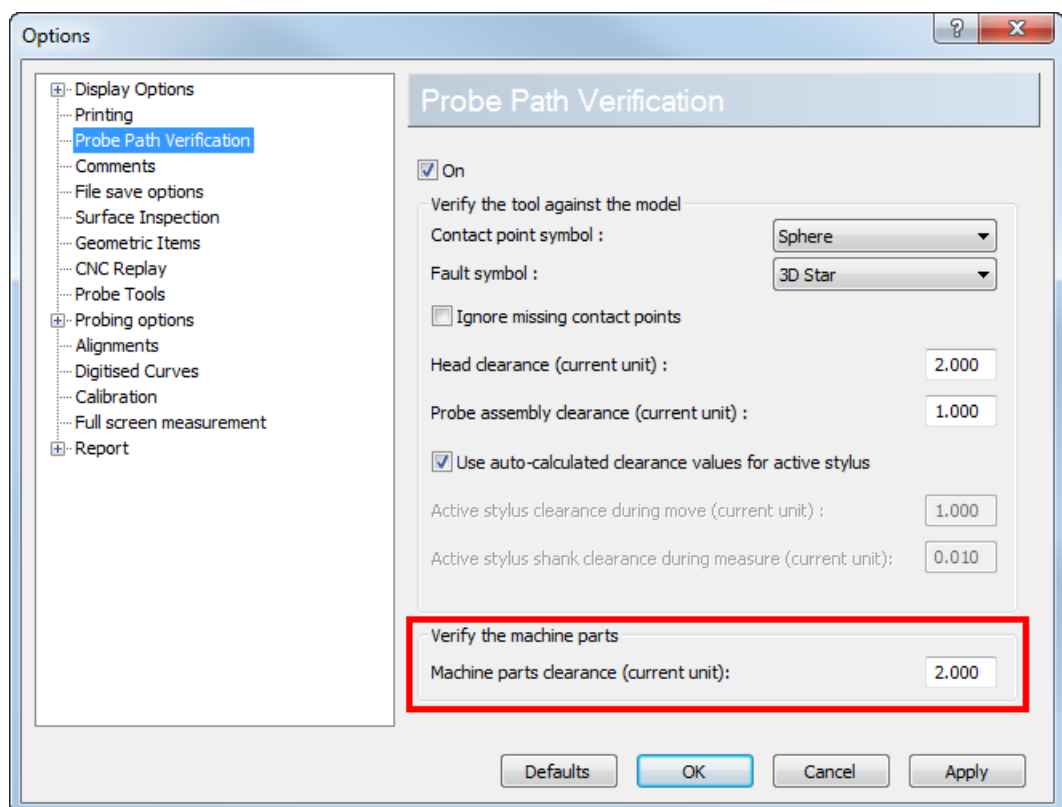
- 1 Click File tab > Options > Application Options.
- 2 On the **Probe Path Verification** page, select the **On** checkbox.

Machine-part verification is enabled (with the existing probe-path verification).

If you play a simulation and a collision is detected with one or more of the movable machine-parts, the simulation is paused and an error is displayed. Choose:

- **Ignore**, to ignore the current error and warn if another collision is detected.
- **Ignore All**, to ignore all errors in the current simulation.
- **Stop**, to stop the current simulation.

To control the clearance allowed for machine-part collisions, set the **Machine parts clearance** option, on the Probe Path Verification page of the Options dialog:



For example, if **Machine parts clearance** is set to **2.000** mm, a collision is detected if the distance between a moving machine-part and the part being measured, or between a moving machine-part and another moving machine-part, falls below 2.000 mm during simulation.



*Static machine-parts and machine-head parts are ignored by default. To verify a static machine-part or a machine-head part, name it in the MTD file. To check for collisions between a static machine-table and the probe, ensure that the table is named **table** in the MTD file.*

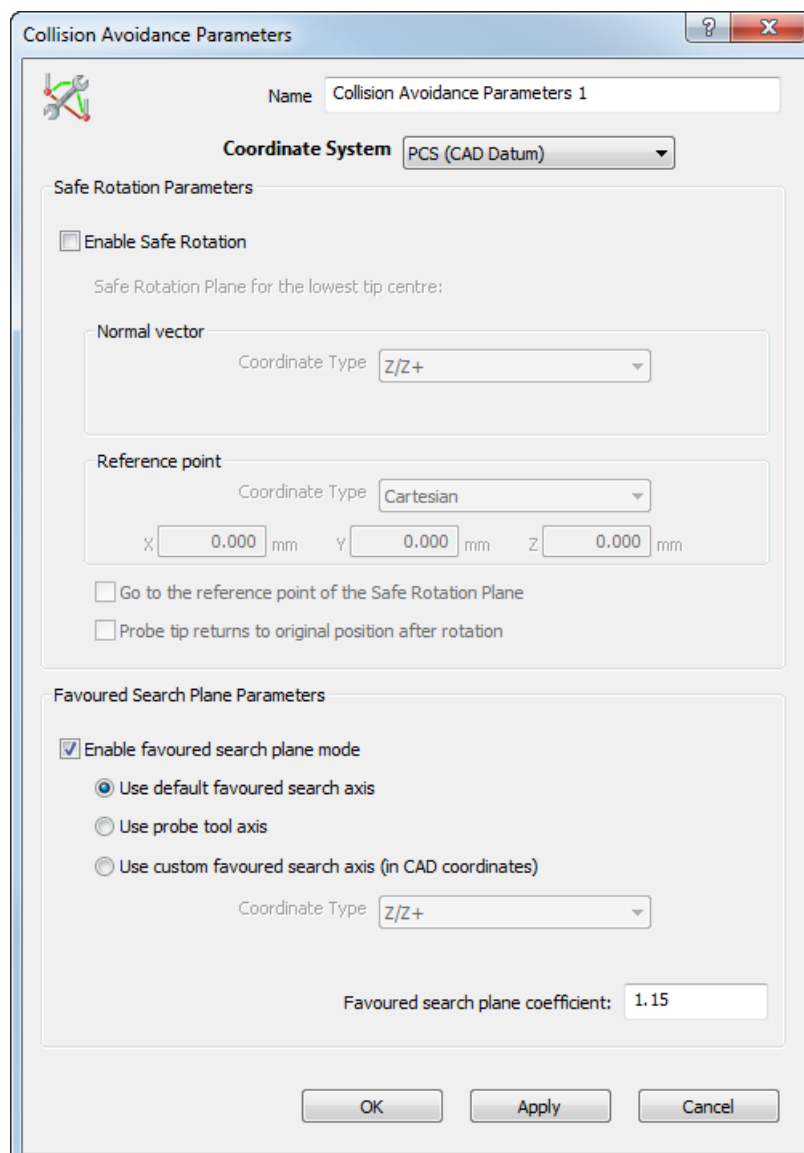
Collision Avoidance Parameters

There is now a Collision Avoidance Parameters item, which enables you to set parameters for Collision Free Link items. It behaves in a similar way to the Probe and Parameters item and applies to all of the Collision Free Link items that follow it in the Sequence Tree. If you insert it into a Geometric Group, it affects only the items in that group.

The Collision Avoidance Parameters item enables Collision Free Link items to perform safe probe rotations when there is a different probing angle between two items.

To create a Collision Avoidance Parameters item, click Home tab > Probe Path panel > Link > Collision Avoidance Parameters.

The **Collision Avoidance Parameters** dialog is displayed:



The screenshot shows the 'Collision Avoidance Parameters' dialog box. The title bar reads 'Collision Avoidance Parameters'. Inside, the 'Name' field is 'Collision Avoidance Parameters 1'. The 'Coordinate System' dropdown is set to 'PCS (CAD Datum)'. The 'Safe Rotation Parameters' section has an unchecked 'Enable Safe Rotation' checkbox. Below it, the 'Normal vector' section has a 'Coordinate Type' dropdown set to 'Z/Z+'. The 'Reference point' section has a 'Coordinate Type' dropdown set to 'Cartesian' and three input fields for X, Y, and Z, all set to '0.000 mm'. There are two unchecked checkboxes: 'Go to the reference point of the Safe Rotation Plane' and 'Probe tip returns to original position after rotation'. The 'Favoured Search Plane Parameters' section has a checked 'Enable favoured search plane mode' checkbox. Below it, three radio buttons are present: 'Use default favoured search axis' (selected), 'Use probe tool axis', and 'Use custom favoured search axis (in CAD coordinates)'. The 'Coordinate Type' dropdown for this section is set to 'Z/Z+'. At the bottom, the 'Favoured search plane coefficient' is set to '1.15'. The dialog has 'OK', 'Apply', and 'Cancel' buttons at the bottom.

Name — Enter a name for the item. The name is used in the inspection sequence, in the **Report** and **Info** tabs, and when referencing the item in other items.

Coordinate system — Select the alignment relative to which the item's measurements are to be reported.

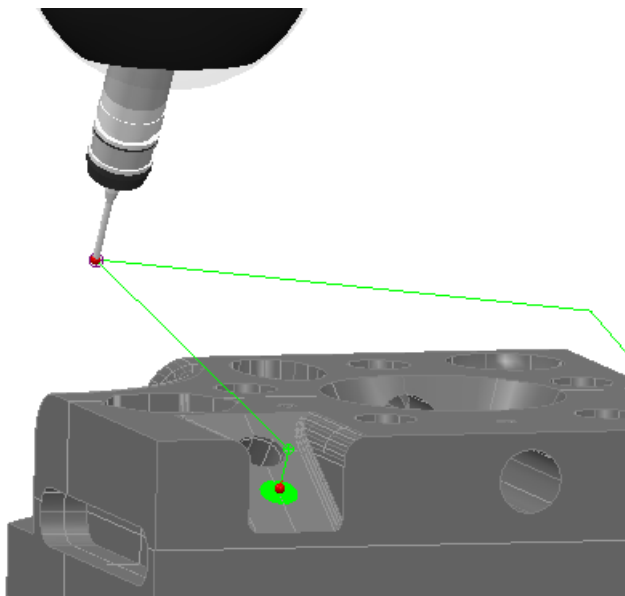
To specify the alignment during the inspection, select *<Active Alignment>*. You can then select the alignment from the **Active alignment** list, or by adding an Active Alignment item to the inspection sequence.

Enable Safe Rotation — Select this check box to define a Safe Rotation Plane. The tip of the probe stays higher than the defined Safe Rotation Plane during any angle rotation.

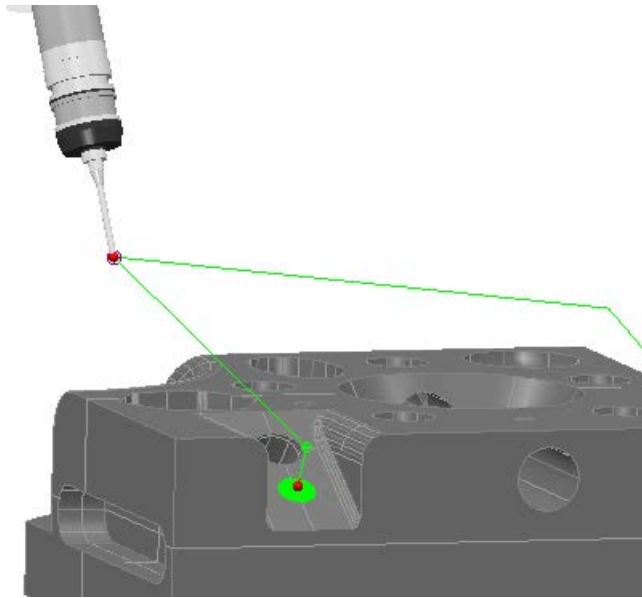
Go to the reference point of the Safe Rotation Plane — Select this option to always drive the rotation centre (not the tip) of the probe head over the reference point of the defined Safe Rotation Plane.

Probe tip returns to original position after rotation — Select this option if your machine automatically compensates the position of the probe tip during or after a rotation. If selected, the probe path continues from the same point after performing a rotation.

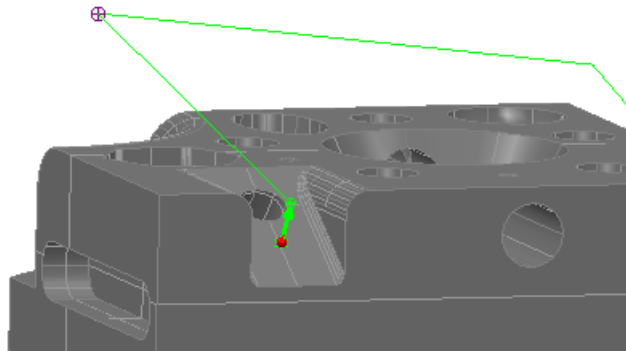
Before rotation:



After rotation:

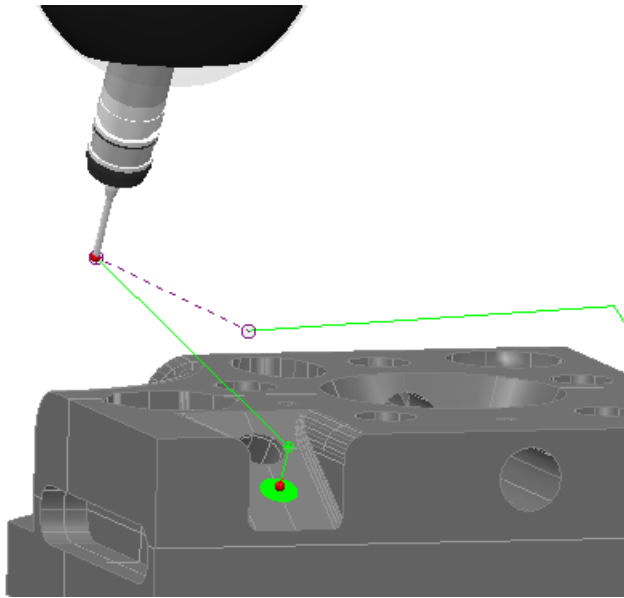


The probe rotation point is marked on the probe path with a purple crossed circle:

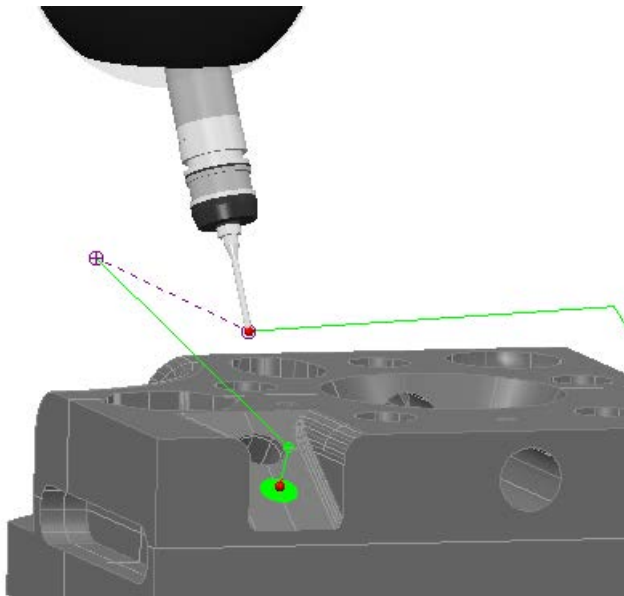


Deselect this option if the probe tip of your machine does not compensate the position of the probe tip. If deselected, the probe path continues from the new position of the probe tip after rotation.

Before rotation:



After rotation:



A purple dashed line joins the known positions of the probe before and after the rotation.



The simulator does not show the real behaviour of the probe during rotation in the CAD View.

Verifying probe path items

The **Unverified probe path**  icon was displayed in the Sequence Tree incorrectly in some cases where it is not applicable. The following items do not have probe paths and the icon is no longer shown:

Inspection Groups

- **On-the-Fly Surface Point**
- **On-the-Fly Edge Point**
- **Guided Surface Point**
- **Guided Edge Point**

Planes:

- **Probed Parallel Plane**
- **Offset Plane**

Lines:

- **Parallel Line**
- **Probed Perpendicular**
- **Offset Line**

Points:

- **Single Point Circle**

Features:

- **Probed Torus**

Dimensions:

- **Linear Dimension**

Point-Cloud features:

- **Point-Cloud Circle**
- **Point-Cloud Ellipse**
- **Point-Cloud Slot**
- **Point-Cloud Rectangle**
- **Point-Cloud Plane**
- **Point-Cloud Sphere**
- **Point-Cloud Cylinder**
- **Point-Cloud Cone**
- **Point-Cloud Torus**

Sections

- **On-the-Fly Section Group**
- **Section Group**

Invalid tool check during full-screen measurement

If you edit the probe database during manual probing and select an invalid tool, a warning is displayed immediately, at the bottom of the **Feature probing** dialog:

Current probe is invalid

If you ignore the warning and close the **Machine Configuration** dialog, a message box is displayed:

Measurement cannot continue with invalid tool.

Click **Select to choose a different tool, or **Stop** to cancel the next measurement.**



*If you click **Stop**, all measured points are preserved.*

Alignments

PowerInspect 2018 has the following improvements to alignments:

- Setting alignment options (see page 26)
- New Best Fit fitting type (see page 27)
- Initial transformation for alignments (see page 28)
- Geometric PLP alignment error messages (see page 29)
- RPS alignment constraints error message (see page 29)

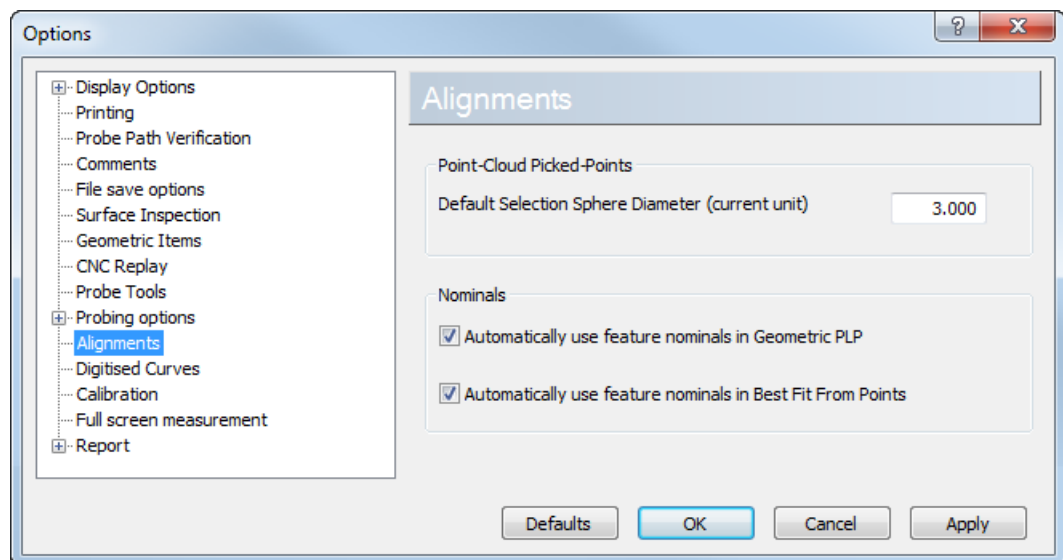
Setting alignment options

There is a new page in the **Options** dialog. Use the **Alignments** page to set alignment options.



*The **Alignment Nominals** page has been removed and its options moved to the **Alignments** page, in the **Nominals** section.*

To open the **Options** dialog in PowerInspect 2018, click File tab > Options > Application Options.

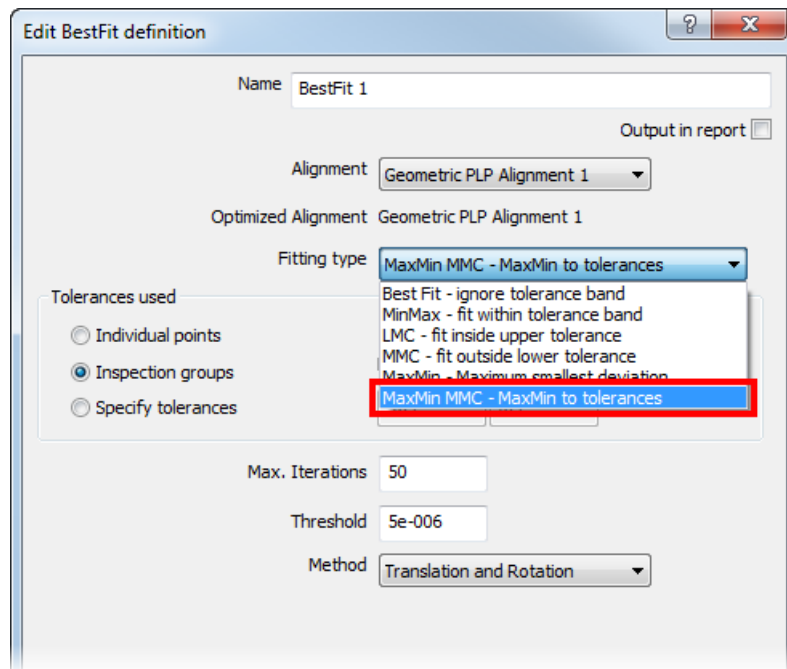


This page contains a new option, in the **Point-Cloud Picked-Points** section:

Default Selection Sphere Diameter — Enter the default value of the diameter of the selection sphere used for a point-cloud picked-points alignment. The current units of the topmost document are used.

New Best Fit fitting type

There is a new **Fitting type** for the **Best Fit** alignment.



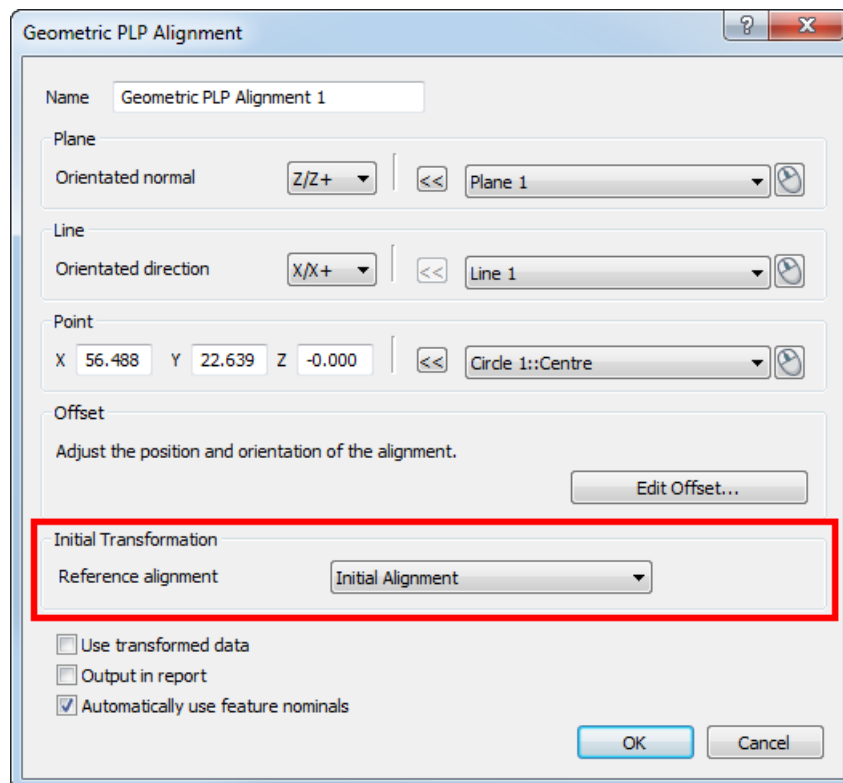
MaxMin MMC is similar to MaxMin, but it takes into account tolerances so that it finds the maximum smallest deviation past tolerances, not just from the CAD.

Initial transformation for alignments

In PowerInspect 2018, you can specify the reference alignment used for the initial CMM to CAD transformation for these alignment types:

- RPS
- Geometric PLP
- Best Fit From Points

For example:



This enables you to reference features from some types of item that caused a circular dependency error in PowerInspect 2017.

Geometric PLP alignment errors

There are two improvements to Geometric PLP alignment errors

Modifying a referenced item

If you change an item that is used in a Geometric PLP alignment, the alignment calculation can become invalid. In this situation, a warning is now displayed.

Referencing an item already in use

The circular dependency error has been reworded for clarification. The error is displayed if you try to reference an item that is already referenced elsewhere. It now reads, for example:

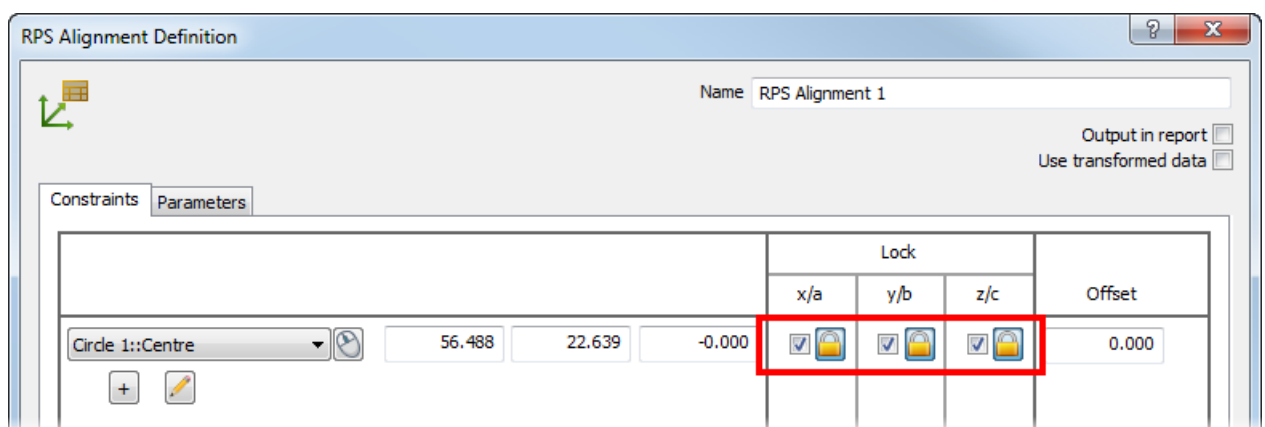
Point nearest to/furthest from an axis 1 causes circular dependency.



Due to the new Initial Transformation (see page 28) setting, this error is rare.

RPS alignment constraints error message

An error message is now displayed if you try to create an RPS alignment without locking at least one axis for each selected feature that has configurable locks. To lock axes for the selected feature, select the check boxes in the **Lock** columns: **x/a**, **y/b**, or **z/c**.



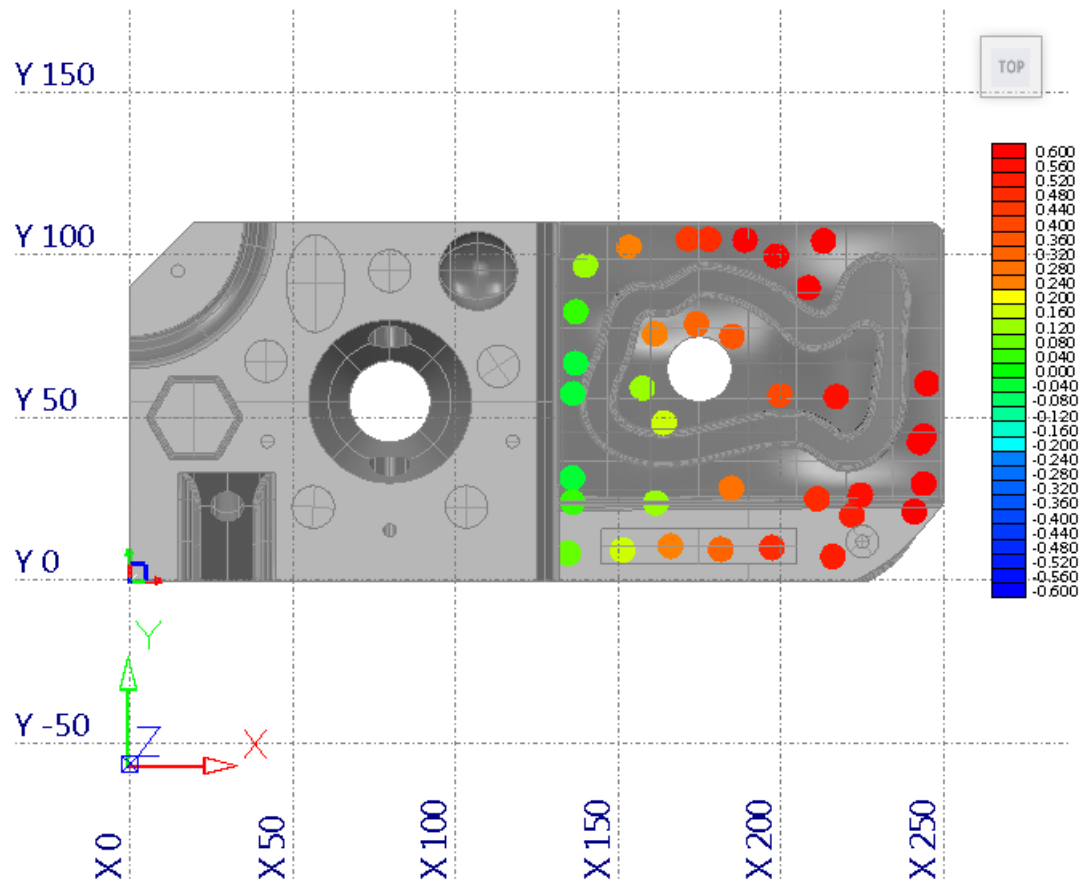
Tolerances

PowerInspect 2018 has the following improvements to tolerances:

- Viewing the tolerance scale (see page 31)
- Viewing tolerances in CAD View labels (see page 32)

Viewing the tolerance scale

In the **CAD View**, the tolerance scale is now displayed on the right, below the ViewCube, to avoid overlap with the coordinate axis labels. The tolerance scale and coordinate axis labels are now easier to read in the CAD View and in reports using CAD View components.



To display the tolerance scale, select **Draw coloured tolerance scale** on the **Display Options** page of the **Options** dialog.

Viewing tolerances in CAD View labels

In PowerInspect 2018, the tolerance columns are now displayed in the order: **Low tol** then **Hi tol**. For example:

Circle 1	Low tol: Hi tol:		Act:	Dev:
Dia:	-0.100	0.100	13.037	0.035
X:	-0.100	0.100	56.488	0.000
Y:	-0.100	0.100	22.639	0.000
Z:	-0.100	0.100	0.000	0.000

This is consistent with the order this information is displayed in other parts of the interface.

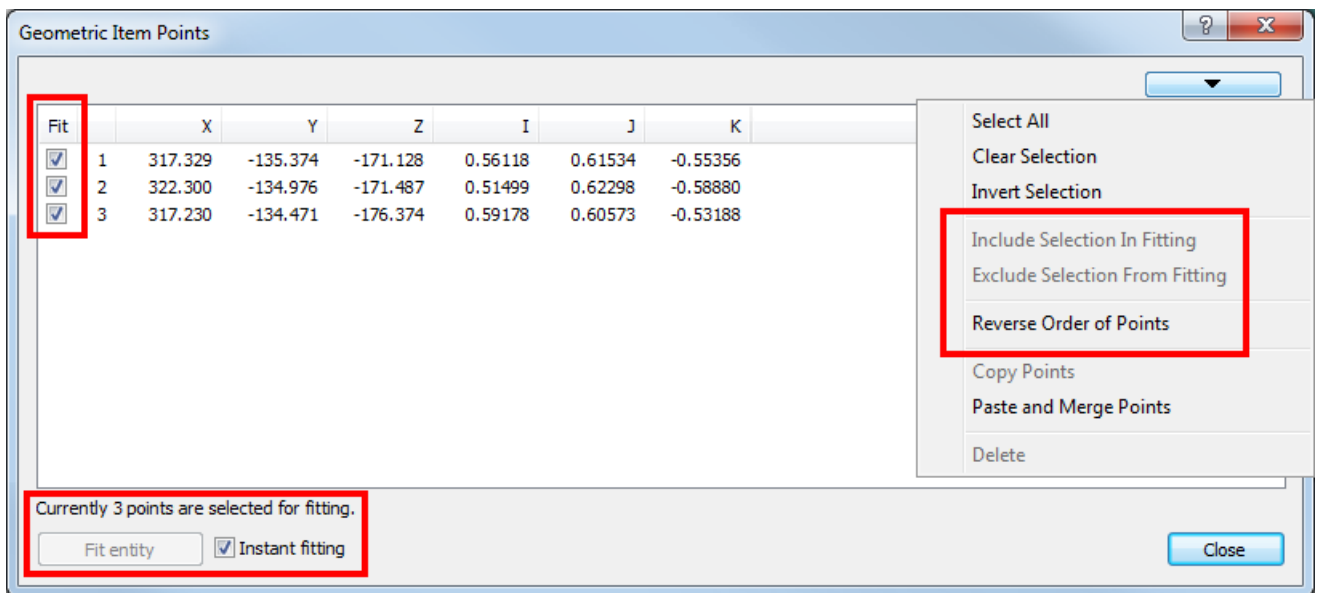
Geometric item points

PowerInspect 2018 has the following improvements to geometric item points:

- Measured points for Single Probed Point items (see page 34)
- Reversing the order of points (see page 34)

Single Probed Point fitting options

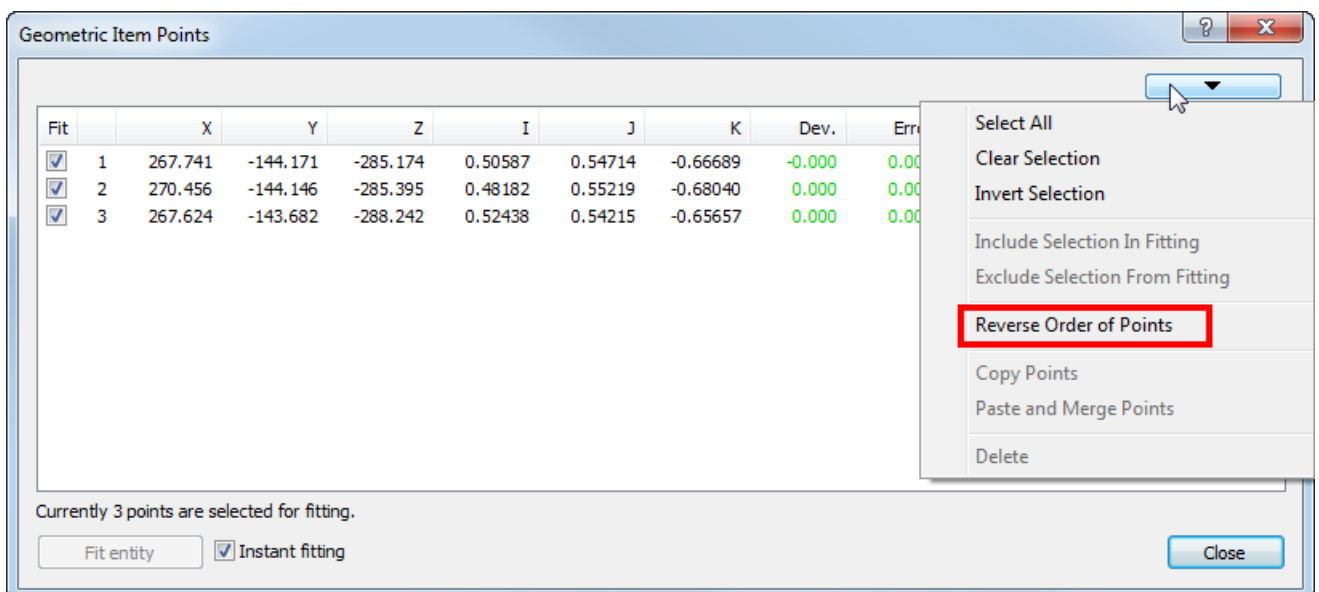
Fitting options are now available in the **Geometric Item Points** dialog for the Single Probed Point item:



You can paste multiple points from the clipboard into this dialog.

Reversing the order of points

Use the **Reverse Order of Points** option in the context menu of the **Geometric Item Points** dialog to reverse the order in which the points are sent to the geometric fitter.



*This option is available only if no sorting is applied. Click the **Fit** column title to clear sorting.*

Digitised curves

PowerInspect 2018 has the following improvements to digitised curves:

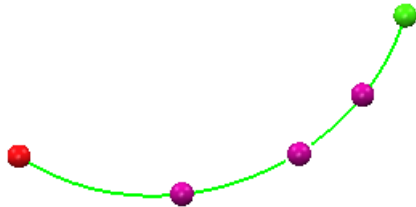
- Polylines (see page 37)

Polylines

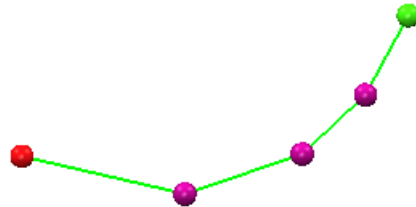
You can now create Digitised Curve items as polylines.

For example:

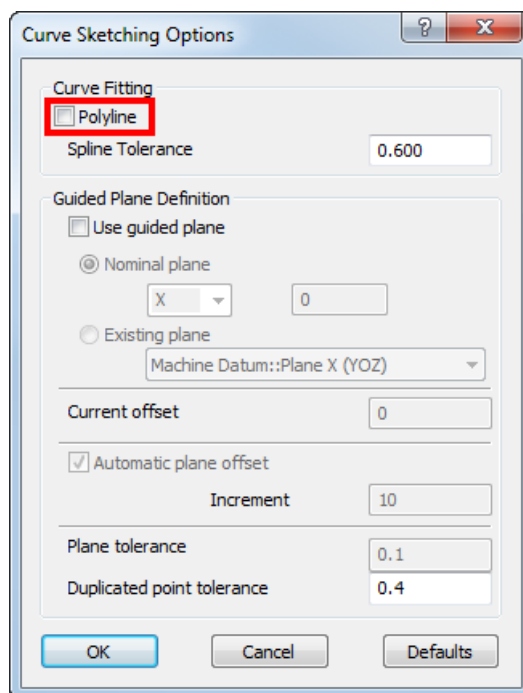
Spline curve:



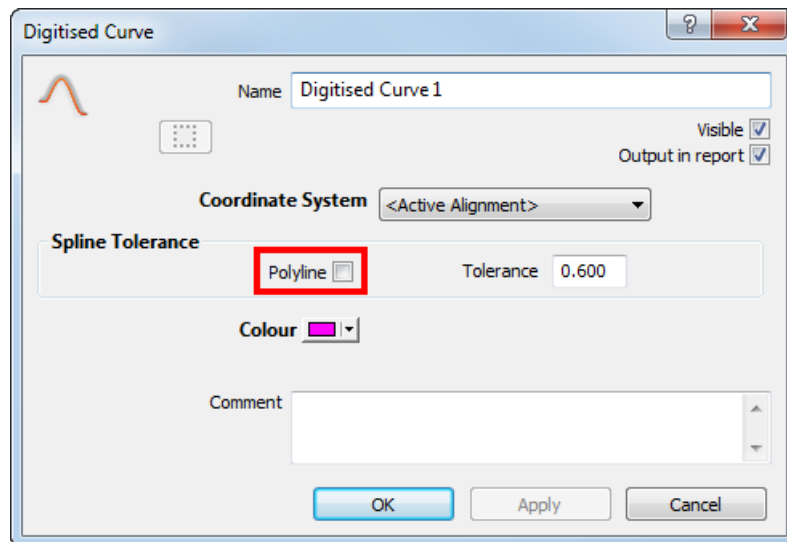
Polyline:



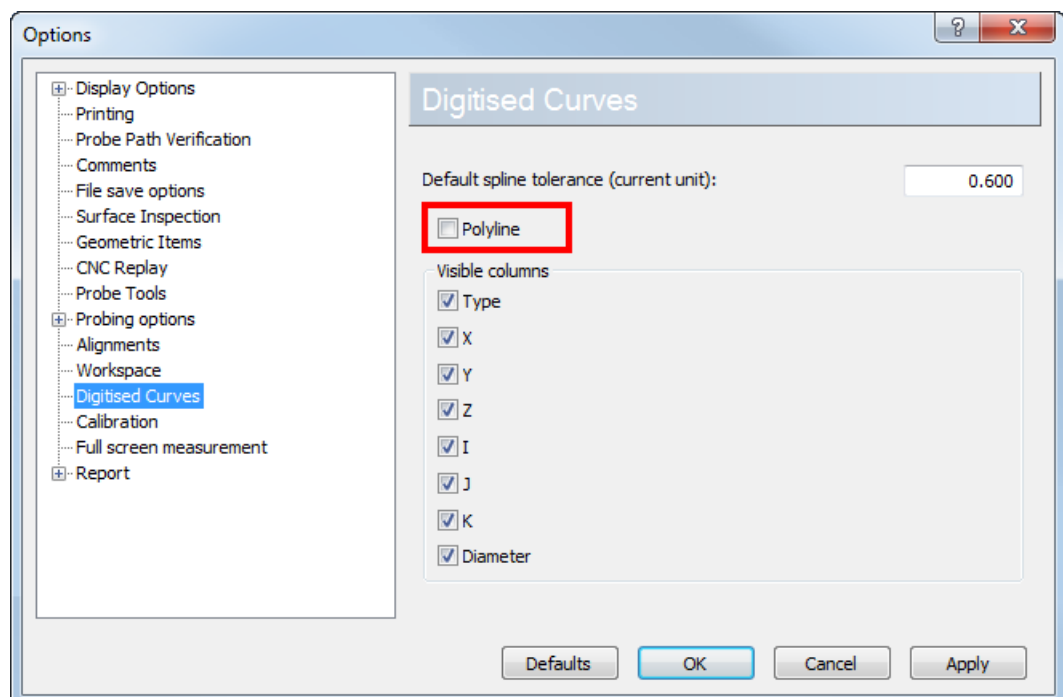
To create a Digitised Curve item as a polyline, in the **Digitised Curve Options** dialog, select the **Polyline** check box.



To change an existing spline curve to a polyline, select the **Polyline** check box in the **Digitised Curve** dialog:



To create all digitised curves as polylines by default, select the **Polyline** check box on the **Digitised Curves** page of the **Options** dialog:



If a digitised curve is a polyline, the **Info** tab displays **Polyline** in the **Value** column for the **Spline Tolerance** parameter:

Digitised Curve 1 (Digitised Curve)

Parameters

Name	Value
Spline Tolerance	Polyline
Colour	#FF00FF

Point-cloud features

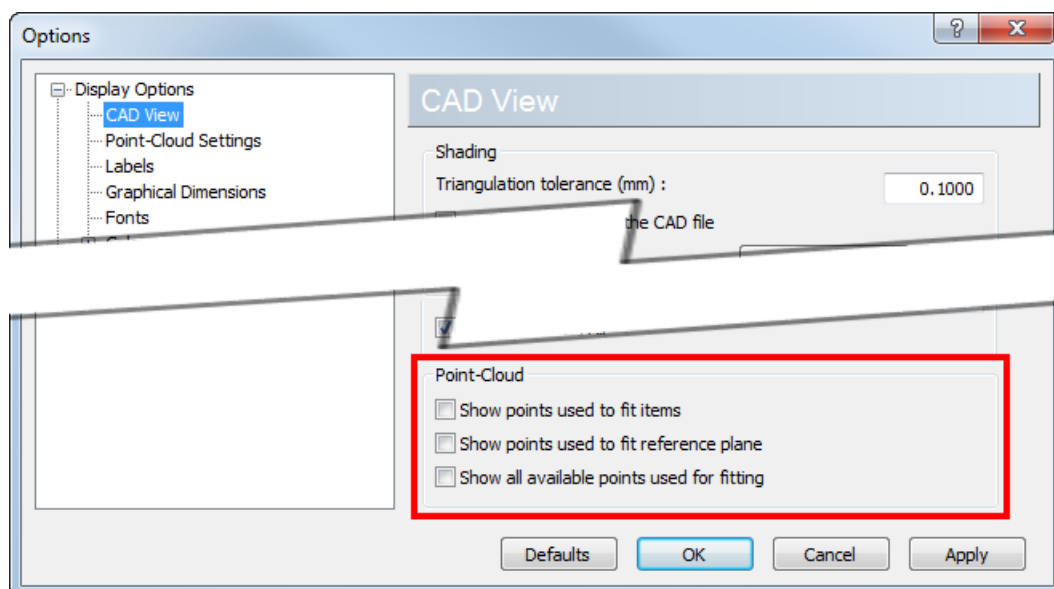
PowerInspect 2018 has the following improvements to point-cloud features:

- Highlighted point-cloud points used for fitting (see page 40)
- Paste as Probed Ellipse (see page 41)

Point-cloud points used for fitting

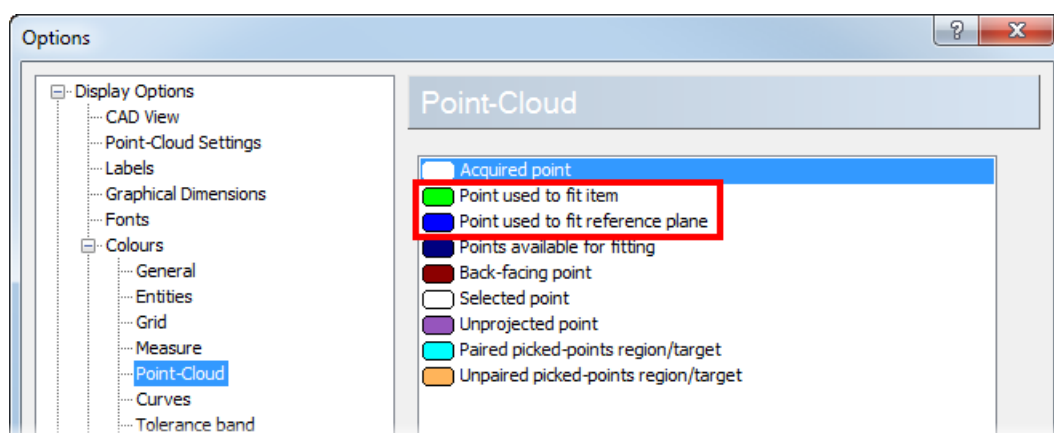
The point-cloud points that are used to fit an item are now highlighted in a different colour.

To control the display of fitting points, use the **Point-Cloud** options in the **Display Options > CAD View** page of the **Options** dialog:



- Show points used to fit items
- Show points used to fit reference plane
- Show all available points used for fitting

To set the colour of these points, use the new options on the **Display Options > Colours > Point-Cloud** page of the **Options** dialog:



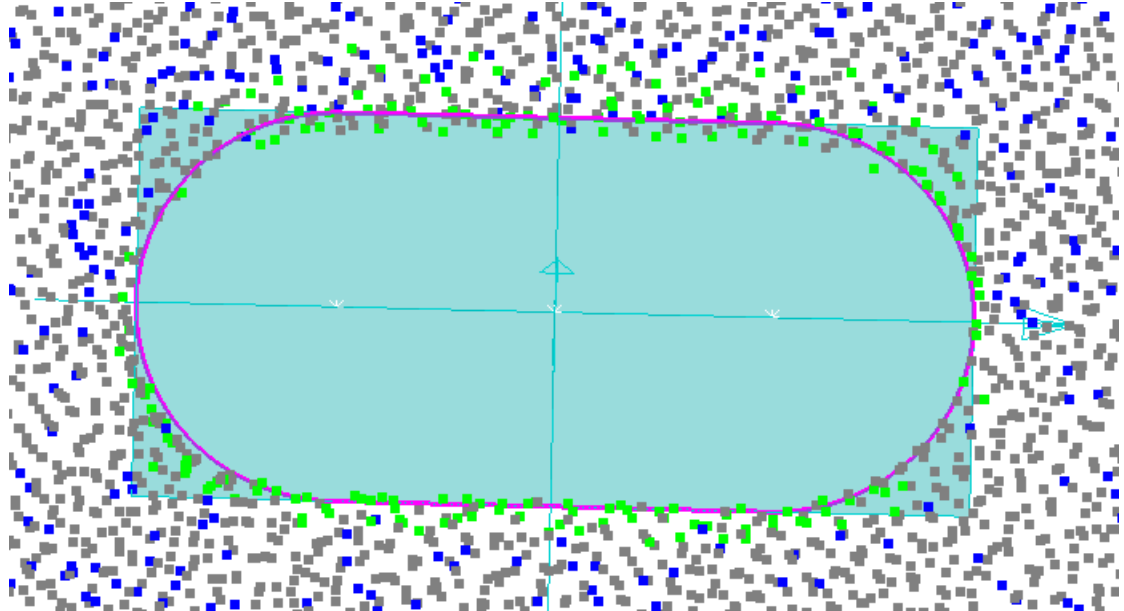
- Point used to fit item
- Point used to fit reference plane



*The **Acquired scanline point** colour is renamed to **Points available for fitting**.*

This example shows a point-cloud slot, with the following points highlighted:

- Points used to fit the point-cloud slot are shown in green.
- Points used to fit the reference plane for the 2D feature are shown in blue.
- Points available for fitting are shown here in grey.



Paste as Probed Ellipse

You can now paste copied point-cloud points as a probed ellipse.

To do this, select Point-Cloud tab > Edit panel > Paste as New Probed > Ellipse.

It works in a similar way to the other options in the same menu.

Index

A

Acquired scanline point • 40
Alignment options • 26
Alignments • 25
Alignments & Datums tab • 3

B

Background colour • 12
Backstage view • 3
BestFit fitting type • 27

C

CAD View labels • 32
Circular dependency • 28
CNC Replay buttons • 15
Collision checking • 16
Collision-avoidance parameters • 19
Collision-free links • 19
Colour scheme • 12
Command locations • 5
Curve types • 37

D

Datums • 3
Default colours • 12
Dialogs • 14
Digitised curves • 37
Dockable dialogs • 14

E

Ellipse • 41
Emergency • 15
E-Stop • 15
Expanding tooltips • 13

F

File tab • 3
Fitting points • 34, 40
Form tab • 3

G

Geometric item points • 33
Geometric PLP alignments • 29
Geometry tab • 3

H

Help • 3, 13
Hi tol • 32
Home tab • 3

I

Initial transformation • 28
Inspection groups • 3
Invalid alignment • 29
Invalid probe check • 24

L

Locking axes • 29
Low tol • 32

M

Machine parts clearance • 17
Machine-part verification • 17
MaxMin MMC • 27
Measure tab • 3
Menus • 3
Modify Item dialogs • 14
Multiple points • 34

O

Order of points • 34

P

Paste as probed ellipse • 41
Point Cloud tab • 3
Point order • 34
Point-cloud features • 39
Point-cloud points • 40
Polylines • 37
Probe check • 24
Probe Path tab • 3
Probe path verification • 23
Probe rotation • 19
Probed ellipse • 41

Q

QAT (Quick Access Toolbar) • 3
Quick Access Toolbar (QAT) • 3

R

Reference alignment • 28
Reference items • 29
Replay CNC item • 15
Report tab • 3
Reverse order of points • 34
Ribbon interface • 3
Ribbon tabs • 3
Rotating probes • 19

RPS alignments • 29
Run • 15

S

Safe rotation • 19
Second-level tooltips • 13
Selection sphere diameter • 26
Simple Measures tab • 3
Simulate probe path • 15
Single Probed Point fitting • 34
Sticky dialogs • 14

T

Tabs • 3
Tolerance scale location • 31
Tolerances • 30
Tool check • 24
Toolbars • 3
Tools tab • 3
Tooltips • 13
Transformation • 28

U

Unverified probe paths • 23
User interface • 2

V

Verification • 16
Verifying probe paths • 23
View tab • 3
View toolbar • 3

Autodesk Legal Notice

© 2017 Autodesk, Inc. All Rights Reserved. Except where otherwise noted, this work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License that can be viewed online at <http://creativecommons.org/licenses/by-nc-sa/3.0/>. This license content, applicable as of 16 December 2014 to this software product, is reproduced here for offline users:

CREATIVE COMMONS CORPORATION IS NOT A LAW FIRM AND DOES NOT PROVIDE LEGAL SERVICES. DISTRIBUTION OF THIS LICENSE DOES NOT CREATE AN ATTORNEY-CLIENT RELATIONSHIP. CREATIVE COMMONS PROVIDES THIS INFORMATION ON AN "AS-IS" BASIS. CREATIVE COMMONS MAKES NO WARRANTIES REGARDING THE INFORMATION PROVIDED, AND DISCLAIMS LIABILITY FOR DAMAGES RESULTING FROM ITS USE.

License

THE WORK (AS DEFINED BELOW) IS PROVIDED UNDER THE TERMS OF THIS CREATIVE COMMONS PUBLIC LICENSE ("CCPL" OR "LICENSE"). THE WORK IS PROTECTED BY COPYRIGHT AND/OR OTHER APPLICABLE LAW. ANY USE OF THE WORK OTHER THAN AS AUTHORIZED UNDER THIS LICENSE OR COPYRIGHT LAW IS PROHIBITED.

BY EXERCISING ANY RIGHTS TO THE WORK PROVIDED HERE, YOU ACCEPT AND AGREE TO BE BOUND BY THE TERMS OF THIS LICENSE. TO THE EXTENT THIS LICENSE MAY BE CONSIDERED TO BE A CONTRACT, THE LICENSOR GRANTS YOU THE RIGHTS CONTAINED HERE IN CONSIDERATION OF YOUR ACCEPTANCE OF SUCH TERMS AND CONDITIONS.

1. Definitions

a. **"Adaptation"** means a work based upon the Work, or upon the Work and other pre-existing works, such as a translation, adaptation, derivative work, arrangement of music or other alterations of a literary or artistic work, or phonogram or performance and includes cinematographic adaptations or any other form in which the Work may be recast, transformed, or adapted including in any form recognizably derived from the original, except that a work that constitutes a Collection will not be considered an Adaptation for the purpose of this License. For the avoidance of doubt, where the Work is a musical work, performance or phonogram, the synchronization of the Work in timed-relation with a moving image ("synching") will be considered an Adaptation for the purpose of this License.

b. **"Collection"** means a collection of literary or artistic works, such as encyclopedias and anthologies, or performances, phonograms or broadcasts, or other works or subject matter other than works listed in Section 1(g) below, which, by reason of the selection and arrangement of their contents, constitute intellectual creations, in which the Work is included in its entirety in unmodified form along with one or more other contributions, each constituting separate and independent works in themselves, which together are assembled into a collective whole. A work that constitutes a Collection will not be considered an Adaptation (as defined above) for the purposes of this License.

c. **"Distribute"** means to make available to the public the original and copies of the Work or Adaptation, as appropriate, through sale or other transfer of ownership.

d. **"License Elements"** means the following high-level license attributes as selected by Licensor and indicated in the title of this License: Attribution, Noncommercial, ShareAlike.

e. **"Licensor"** means the individual, individuals, entity or entities that offer(s) the Work under the terms of this License.

f. **"Original Author"** means, in the case of a literary or artistic work, the individual, individuals, entity or entities who created the Work or if no individual or entity can be identified, the publisher; and in addition (i) in the case of a performance the actors, singers, musicians, dancers, and other persons who act, sing, deliver, declaim, play in, interpret or otherwise perform literary or artistic works or expressions of folklore; (ii) in the case of a phonogram the producer being the person or legal entity who first fixes the sounds of a performance or other sounds; and, (iii) in the case of broadcasts, the organization that transmits the broadcast.

g. **"Work"** means the literary and/or artistic work offered under the terms of this License including without limitation any production in the literary, scientific and artistic domain, whatever may be the mode or form of its expression including digital form, such as a book, pamphlet and other writing; a lecture, address, sermon or other work of the same nature; a dramatic or dramatico-musical work; a choreographic work or entertainment in dumb show; a musical composition with or without words; a cinematographic work to which are assimilated works expressed by a process analogous to cinematography; a work of drawing, painting, architecture, sculpture, engraving or lithography; a photographic work to which are assimilated works expressed by a process analogous to photography; a work of applied art; an illustration, map, plan, sketch or three-dimensional work relative to geography, topography, architecture or science; a performance; a broadcast; a phonogram; a compilation of data to the extent it is protected as a copyrightable work; or a work performed by a variety or circus performer to the extent it is not otherwise considered a literary or artistic work.

h. **"You"** means an individual or entity exercising rights under this License who has not previously violated the terms of this License with respect to the Work, or who has received express permission from the Licensor to exercise rights under this License despite a previous violation.

i. **"Publicly Perform"** means to perform public recitations of the Work and to communicate to the public those public recitations, by any means or process, including by wire or wireless means or public digital performances; to make available to the public Works in such a way that members of the public may access these Works from a place and at a place individually chosen by them; to perform the Work to the public by any means or process and the communication to the public of the performances of the Work, including by public digital performance; to broadcast and rebroadcast the Work by any means including signs, sounds or images.

j. **"Reproduce"** means to make copies of the Work by any means including without limitation by sound or visual recordings and the right of fixation and reproducing fixations of the Work, including storage of a protected performance or phonogram in digital form or other electronic medium.

2. Fair Dealing Rights. Nothing in this License is intended to reduce, limit, or restrict any uses free from copyright or rights arising from limitations or exceptions that are provided for in connection with the copyright protection under copyright law or other applicable laws.

3. License Grant. Subject to the terms and conditions of this License, Licensors hereby grants You a worldwide, royalty-free, non-exclusive, perpetual (for the duration of the applicable copyright) license to exercise the rights in the Work as stated below:

- a. to Reproduce the Work, to incorporate the Work into one or more Collections, and to Reproduce the Work as incorporated in the Collections;
- b. to create and Reproduce Adaptations provided that any such Adaptation, including any translation in any medium, takes reasonable steps to clearly label, demarcate or otherwise identify that changes were made to the original Work. For example, a translation could be marked "The original work was translated from English to Spanish," or a modification could indicate "The original work has been modified.";
- c. to Distribute and Publicly Perform the Work including as incorporated in Collections; and,
- d. to Distribute and Publicly Perform Adaptations.

The above rights may be exercised in all media and formats whether now known or hereafter devised. The above rights include the right to make such modifications as are technically necessary to exercise the rights in other media and formats. Subject to Section 8(f), all rights not expressly granted by Licensors are hereby reserved, including but not limited to the rights described in Section 4(e).

4. Restrictions. The license granted in Section 3 above is expressly made subject to and limited by the following restrictions:

a. You may Distribute or Publicly Perform the Work only under the terms of this License. You must include a copy of, or the Uniform Resource Identifier (URI) for, this License with every copy of the Work You Distribute or Publicly Perform. You may not offer or impose any terms on the Work that restrict the terms of this License or the ability of the recipient of the Work to exercise the rights granted to that recipient under the terms of the License. You may not sublicense the Work. You must keep intact all notices that refer to this License and to the disclaimer of warranties with every copy of the Work You Distribute or Publicly Perform. When You Distribute or Publicly Perform the Work, You may not impose any effective technological measures on the Work that restrict the ability of a recipient of the Work from You to exercise the rights granted to that recipient under the terms of the License. This Section 4(a) applies to the Work as incorporated in a Collection, but this does not require the Collection apart from the Work itself to be made subject to the terms of this License. If You create a Collection, upon notice from any Licensor You must, to the extent practicable, remove from the Collection any credit as required by Section 4(d), as requested. If You create an Adaptation, upon notice from any Licensor You must, to the extent practicable, remove from the Adaptation any credit as required by Section 4(d), as requested.

b. You may Distribute or Publicly Perform an Adaptation only under: (i) the terms of this License; (ii) a later version of this License with the same License Elements as this License; (iii) a Creative Commons jurisdiction license (either this or a later license version) that contains the same License Elements as this License (e.g., Attribution-NonCommercial-ShareAlike 3.0 US) ("Applicable License"). You must include a copy of, or the URI, for Applicable License with every copy of each Adaptation You Distribute or Publicly Perform. You may not offer or impose any terms on the Adaptation that restrict the terms of the Applicable License or the ability of the recipient of the Adaptation to exercise the rights granted to that recipient under the terms of the Applicable License. You must keep intact all notices that refer to the Applicable License and to the disclaimer of warranties with every copy of the Work as included in the Adaptation You Distribute or Publicly Perform. When You Distribute or Publicly Perform the Adaptation, You may not impose any effective technological measures on the Adaptation that restrict the ability of a recipient of the Adaptation from You to exercise the rights granted to that recipient under the terms of the Applicable License. This Section 4(b) applies to the Adaptation as incorporated in a Collection, but this does not require the Collection apart from the Adaptation itself to be made subject to the terms of the Applicable License.

c. You may not exercise any of the rights granted to You in Section 3 above in any manner that is primarily intended for or directed toward commercial advantage or private monetary compensation. The exchange of the Work for other copyrighted works by means of digital file-sharing or otherwise shall not be considered to be intended for or directed toward commercial advantage or private monetary compensation, provided there is no payment of any monetary compensation in connection with the exchange of copyrighted works.

d. If You Distribute, or Publicly Perform the Work or any Adaptations or Collections, You must, unless a request has been made pursuant to Section 4(a), keep intact all copyright notices for the Work and provide, reasonable to the medium or means You are utilizing: (i) the name of the Original Author (or pseudonym, if applicable) if supplied, and/or if the Original Author and/or Licensor designate another party or parties (e.g., a sponsor institute, publishing entity, journal) for attribution ("Attribution Parties") in Licensor's copyright notice, terms of service or by other reasonable means, the name of such party or parties; (ii) the title of the Work if supplied; (iii) to the extent reasonably practicable, the URI, if any, that Licensor specifies to be associated with the Work, unless such URI does not refer to the copyright notice or licensing information for the Work; and, (iv) consistent with Section 3(b), in the case of an Adaptation, a credit identifying the use of the Work in the Adaptation (e.g., "French translation of the Work by Original Author," or "Screenplay based on original Work by Original Author"). The credit required by this Section 4(d) may be implemented in any reasonable manner; provided, however, that in the case of a Adaptation or Collection, at a minimum such credit will appear, if a credit for all contributing authors of the Adaptation or Collection appears, then as part of these credits and in a manner at least as prominent as the credits for the other contributing authors. For the avoidance of doubt, You may only use the credit required by this Section for the purpose of attribution in the manner set out above and, by exercising Your rights under this License, You may not implicitly or explicitly assert or imply any connection with, sponsorship or endorsement by the Original Author, Licensor and/or Attribution Parties, as appropriate, of You or Your use of the Work, without the separate, express prior written permission of the Original Author, Licensor and/or Attribution Parties.

e. For the avoidance of doubt:

- i. Non-waivable Compulsory License Schemes. In those jurisdictions in which the right to collect royalties through any statutory or compulsory licensing scheme cannot be waived, the Licensor reserves the exclusive right to collect such royalties for any exercise by You of the rights granted under this License;
- ii. Waivable Compulsory License Schemes. In those jurisdictions in which the right to collect royalties through any statutory or compulsory licensing scheme can be waived, the Licensor reserves the exclusive right to collect such royalties for any exercise by You of the rights granted under this License if Your exercise of such rights is for a purpose or use which is otherwise than noncommercial as permitted under Section 4(c) and otherwise waives the right to collect royalties through any statutory or compulsory licensing scheme; and,
- iii. Voluntary License Schemes. The Licensor reserves the right to collect royalties, whether individually or, in the event that the Licensor is a member of a collecting society that administers voluntary licensing schemes, via that society, from any exercise by You of the rights granted under this License that is for a purpose or use which is otherwise than noncommercial as permitted under Section 4(c).

f. Except as otherwise agreed in writing by the Licensor or as may be otherwise permitted by applicable law, if You Reproduce, Distribute or Publicly Perform the Work either by itself or as part of any Adaptations or Collections, You must not distort, mutilate, modify or take other derogatory action in relation to the Work which would be prejudicial to the Original Author's honor or reputation. Licensor agrees that in those jurisdictions (e.g. Japan), in which any exercise of the right granted in Section 3(b) of this License (the right to make Adaptations) would be deemed to be a distortion, mutilation, modification or other derogatory action prejudicial to the Original Author's honor and reputation, the Licensor will waive or not assert, as appropriate, this Section, to the fullest extent permitted by the applicable national law, to enable You to reasonably exercise Your right under Section 3(b) of this License (right to make Adaptations) but not otherwise.

5. Representations, Warranties and Disclaimer

UNLESS OTHERWISE MUTUALLY AGREED TO BY THE PARTIES IN WRITING AND TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, LICENSOR OFFERS THE WORK AS-IS AND MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND CONCERNING THE WORK, EXPRESS, IMPLIED, STATUTORY OR OTHERWISE, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF TITLE, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NONINFRINGEMENT, OR THE ABSENCE OF LATENT OR OTHER DEFECTS, ACCURACY, OR THE PRESENCE OF ABSENCE OF ERRORS, WHETHER OR NOT DISCOVERABLE. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OF IMPLIED WARRANTIES, SO THIS EXCLUSION MAY NOT APPLY TO YOU.

6. Limitation on Liability. EXCEPT TO THE EXTENT REQUIRED BY APPLICABLE LAW, IN NO EVENT WILL LICENSOR BE LIABLE TO YOU ON ANY LEGAL THEORY FOR ANY SPECIAL, INCIDENTAL, CONSEQUENTIAL, PUNITIVE OR EXEMPLARY DAMAGES ARISING OUT OF THIS LICENSE OR THE USE OF THE WORK, EVEN IF LICENSOR HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

7. Termination

- a. This License and the rights granted hereunder will terminate automatically upon any breach by You of the terms of this License. Individuals or entities who have received Adaptations or Collections from You under this License, however, will not have their licenses terminated provided such individuals or entities remain in full compliance with those licenses. Sections 1, 2, 5, 6, 7, and 8 will survive any termination of this License.
- b. Subject to the above terms and conditions, the license granted here is perpetual (for the duration of the applicable copyright in the Work). Notwithstanding the above, Licensor reserves the right to release the Work under different license terms or to stop distributing the Work at any time; provided, however that any such election will not serve to withdraw this License (or any other license that has been, or is required to be, granted under the terms of this License), and this License will continue in full force and effect unless terminated as stated above.

8. Miscellaneous

- a. Each time You Distribute or Publicly Perform the Work or a Collection, the Licensors offers to the recipient a license to the Work on the same terms and conditions as the license granted to You under this License.
- b. Each time You Distribute or Publicly Perform an Adaptation, Licensors offers to the recipient a license to the original Work on the same terms and conditions as the license granted to You under this License.
- c. If any provision of this License is invalid or unenforceable under applicable law, it shall not affect the validity or enforceability of the remainder of the terms of this License, and without further action by the parties to this agreement, such provision shall be reformed to the minimum extent necessary to make such provision valid and enforceable.
- d. No term or provision of this License shall be deemed waived and no breach consented to unless such waiver or consent shall be in writing and signed by the party to be charged with such waiver or consent.
- e. This License constitutes the entire agreement between the parties with respect to the Work licensed here. There are no understandings, agreements or representations with respect to the Work not specified here. Licensors shall not be bound by any additional provisions that may appear in any communication from You. This License may not be modified without the mutual written agreement of the Licensors and You.
- f. The rights granted under, and the subject matter referenced, in this License were drafted utilizing the terminology of the Berne Convention for the Protection of Literary and Artistic Works (as amended on September 28, 1979), the Rome Convention of 1961, the WIPO Copyright Treaty of 1996, the WIPO Performances and Phonograms Treaty of 1996 and the Universal Copyright Convention (as revised on July 24, 1971). These rights and subject matter take effect in the relevant jurisdiction in which the License terms are sought to be enforced according to the corresponding provisions of the implementation of those treaty provisions in the applicable national law. If the standard suite of rights granted under applicable copyright law includes additional rights not granted under this License, such additional rights are deemed to be included in the License; this License is not intended to restrict the license of any rights under applicable law.

Creative Commons Notice

Creative Commons is not a party to this License, and makes no warranty whatsoever in connection with the Work. Creative Commons will not be liable to You or any party on any legal theory for any damages whatsoever, including without limitation any general, special, incidental or consequential damages arising in connection to this license. Notwithstanding the foregoing two (2) sentences, if Creative Commons has expressly identified itself as the Licensors hereunder, it shall have all rights and obligations of Licensors.

Except for the limited purpose of indicating to the public that the Work is licensed under the CCPL, Creative Commons does not authorize the use by either party of the trademark "Creative Commons" or any related trademark or logo of Creative Commons without the prior written consent of Creative Commons. Any permitted use will be in compliance with Creative Commons' then-current trademark usage guidelines, as may be published on its website or otherwise made available upon request from time to time. For the avoidance of doubt, this trademark restriction does not form part of this License.

Creative Commons may be contacted at <http://creativecommons.org/>.

Certain materials included in this publication are reprinted with the permission of the copyright holder.

Creative Commons FAQ

Autodesk's Creative Commons FAQ can be viewed online at <http://www.autodesk.com/company/creative-commons>, and is reproduced here for offline users.

In collaboration with Creative Commons, Autodesk invites you to share your knowledge with the rest of the world, inspiring others to learn, achieve goals, and ignite creativity. You can freely borrow from the Autodesk Help, Support and Video libraries to build a new learning experience for anyone with a particular need or interest.

What is Creative Commons?

Creative Commons (CC) is a nonprofit organization that offers a simple licensing model that frees digital content to enable anyone to modify, remix, and share creative works.

How do I know if Autodesk learning content and Autodesk University content is available under Creative Commons?

All Autodesk learning content and Autodesk University content released under Creative Commons is explicitly marked with a Creative Commons icon specifying what you can and cannot do. Always follow the terms of the stated license.

What Autodesk learning content is currently available under Creative Commons?

Over time, Autodesk will release more and more learning content under the Creative Commons licenses.

Currently available learning content:

- Autodesk online help-Online help for many Autodesk products, including its embedded media such as images and help movies.
- Autodesk Learning Videos-A range of video-based learning content, including the video tutorials on the Autodesk YouTube™ Learning Channels and their associated iTunes® podcasts.
- Autodesk downloadable materials-Downloadable 3D assets, digital footage, and other files you can use to follow along on your own time.

Is Autodesk learning and support content copyrighted?

Yes. Creative Commons licensing does not replace copyright. Copyright remains with Autodesk or its suppliers, as applicable. But it makes the terms of use much more flexible.

What do the Autodesk Creative Commons licenses allow?

Autodesk makes some of its learning and support content available under two distinct Creative Commons licenses. The learning content is clearly marked with the applicable Creative Commons license. You must comply with the following conditions:

- **Attribution-NonCommercial-ShareAlike (CC BY-NC-SA)** This license lets you copy, distribute, display, remix, tweak, and build upon our work noncommercially, as long as you credit Autodesk and license your new creations under the identical terms.
- **Attribution-NonCommercial-No Derivative Works (CC BY-NC-ND)** This license lets you copy, distribute, and display only verbatim copies of our work as long as you credit us, but you cannot alter the learning content in any way or use it commercially.
- **Special permissions on content marked as No Derivative Works** For video-based learning content marked as No Derivative Works (ND), Autodesk grants you special permission to make modifications but only for the purpose of translating the video content into another language.

These conditions can be modified only by explicit permission of Autodesk, Inc. Send requests for modifications outside of these license terms to creativecommons@autodesk.com.

Can I get special permission to do something different with the learning content?

Unless otherwise stated, our Creative Commons conditions can be modified only by explicit permission of Autodesk, Inc. If you have any questions or requests for modifications outside of these license terms, email us at creativecommons@autodesk.com.

How do I attribute Autodesk learning content?

You must explicitly credit Autodesk, Inc., as the original source of the materials. This is a standard requirement of the Attribution (BY) term in all Creative Commons licenses. In some cases, such as for the Autodesk video learning content, we specify exactly how we would like to be attributed.

This is usually described on the video's end-plate. For the most part providing the title of the work, the URL where the work is hosted, and a credit to Autodesk, Inc., is quite acceptable. Also, remember to keep intact any copyright notice associated with the work. This may sound like a lot of information, but there is flexibility in the way you present it.

Here are some examples:

"This document contains content adapted from the Autodesk® Maya® Help, available under a Creative Commons Attribution-NonCommercial-Share Alike license. Copyright © Autodesk, Inc."

"This is a Finnish translation of a video created by the Autodesk Maya Learning Channel @ www.youtube.com/mayahowtos. Copyright © Autodesk, Inc."

"Special thanks to the Autodesk® 3ds Max® Learning Channel @ www.youtube.com/3dsmaxhowtos. Copyright © Autodesk, Inc."

Do I follow YouTube's standard license or Autodesk's Creative Commons license?

The videos of the Autodesk Learning Channels on YouTube are uploaded under YouTube's standard license policy. Nonetheless, these videos are released by Autodesk as Creative Commons Attribution-NonCommercial-No Derivative Works (CC BY-NC-ND) and are marked as such.

You are free to use our video learning content according to the Creative Commons license under which they are released.

Where can I easily download Autodesk learning videos?

Most of the Autodesk Learning Channels have an associated iTunes podcast from where you can download the same videos and watch them offline. When translating Autodesk learning videos, we recommend downloading the videos from the iTunes podcasts.

Can I translate Autodesk learning videos?

Yes. Even though our learning videos are licensed as No Derivative Works (ND), we grant everyone permission to translate the audio and subtitles into other languages. In fact, if you want to recapture the video tutorial as-is but show the user interface in another language, you are free to do so. Be sure to give proper attribution as indicated on the video's Creative Commons end-plate. This special permission only applies to translation projects. Requests for modifications outside of these license terms can be directed to creativecommons@autodesk.com.

How do I let others know that I have translated Autodesk learning content into another language?

Autodesk is happy to see its learning content translated into as many different languages as possible. If you translate our videos or any of our learning content into other languages, let us know. We can help promote your contributions to our growing multilingual community. In fact, we encourage you to find creative ways to share our learning content with your friends, family, students, colleagues, and communities around the world. Contact us at creativecommons@autodesk.com.

I have translated Autodesk learning videos into other languages. Can I upload them to my own YouTube channel?

Yes, please do and let us know where to find them so that we can help promote your contributions to our growing multilingual Autodesk community. Contact us at creativecommons@autodesk.com.

Can I repost or republish Autodesk learning content on my site or blog?

Yes, you can make Autodesk learning material available on your site or blog as long as you follow the terms of the Creative Commons license under which the learning content is released. If you are simply referencing the learning content as-is, then we recommend that you link to it or embed it from where it is hosted by Autodesk. That way the content will always be fresh. If you have translated or remixed our learning content, then by all means you can host it yourself. Let us know about it, and we can help promote your contributions to our global learning community. Contact us at creativecommons@autodesk.com.

Can I show Autodesk learning content during my conference?

Yes, as long as it's within the scope of a noncommercial event, and as long as you comply with the terms of the Creative Commons license outlined above. In particular, the videos must be shown unedited with the exception of modifications for the purpose of translation. If you wish to use Autodesk learning content in a commercial context, contact us with a request for permission at creativecommons@autodesk.com.

Can I use Autodesk learning content in my classroom?

Yes, as long as you comply with the terms of the Creative Commons license under which the learning material is released. Many teachers use Autodesk learning content to stimulate discussions with students or to complement course materials, and we encourage you to do so as well.

Can I re-edit and remix Autodesk video learning content?

No, but for one exception. Our Creative Commons BY-NC-ND license clearly states that "derivative works" of any kind (edits, cuts, remixes, mashups, and so on) are not allowed without explicit permission from Autodesk. This is essential for preserving the integrity of our instructors' ideas. However, we do give you permission to modify our videos for the purpose of translating them into other languages.

Can I re-edit and remix Autodesk downloadable 3D assets and footage?

Yes. The Autodesk Learning Channels on YouTube provide downloadable 3D assets, footage, and other files for you to follow along with the video tutorials on your own time. This downloadable material is made available under a Creative Commons Attribution-NonCommercial-ShareAlike (CC BY-NC-SA) license. You can download these materials and experiment with them, but your remixes must give us credit as the original source of the content and be shared under the identical license terms.

Can I use content from Autodesk online help to create new materials for a specific audience?

Yes, if you want to help a specific audience learn how to optimize the use of their Autodesk software, there is no need to start from scratch. You can use, remix, or enrich the relevant help content and include it in your book, instructions, examples, or workflows you create, then Share-Alike with the community. Always be sure to comply with the terms of the Creative Commons license under which the learning content is released.

What are the best practices for marking content with Creative Commons Licenses?

When reusing a CC-licensed work (by sharing the original or a derivative based on the original), it is important to keep intact any copyright notice associated with the work, including the Creative Commons license being used. Make sure you abide by the license conditions provided by the licensor, in this case Autodesk, Inc.

Trademarks

The following are registered trademarks or trademarks of Autodesk, Inc., and/or its subsidiaries and/or affiliates in the USA and other countries: 123D, 3ds Max, Alias, ATC, AutoCAD LT, AutoCAD, Autodesk, the Autodesk logo, Autodesk 123D, Autodesk Homestyler, Autodesk Inventor, AutoSnap, BIM 360, Buzzsaw, CADmep, CAMduct, Civil 3D, Configurator 360, Dancing Baby (image), DWF, DWG, DWG (design/logo), DWG Extreme, DWG TrueConvert, DWG TrueView, DWGX, DXF, Ember, ESTmep, FBX, Flame, FormIt 360, Fusion 360, Glue, Heidi, Homestyler, InfraWorks, Instructables, Instructables (stylized robot design/logo), Inventor, Inventor HSM, Inventor LT, Maya, Maya LT, Moldflow Plastics Advisers, Moldflow, MotionBuilder, Mudbox, Navisworks, Opticore, P9, Pier 9, Pixlr, Pixlr-o-matic, Publisher 360, RasterDWG, RealDWG, ReCap, ReCap 360, Remote, Revit LT, Revit, Scaleform, Showcase, Showcase 360, SketchBook, Softimage, Spark & Design, Spark Logo, Tinkercad, Tinkerplay, TrustedDWG, VRED

All other brand names, product names or trademarks belong to their respective holders.

Disclaimer

THIS PUBLICATION AND THE INFORMATION CONTAINED HEREIN IS MADE AVAILABLE BY AUTODESK, INC. "AS IS." AUTODESK, INC. DISCLAIMS ALL WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE REGARDING THESE MATERIALS.



Except where otherwise noted, this work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License. Please see the Autodesk Creative Commons FAQ for more information.